

ABSTRACT OF DISCLOSURE

A system and method for the selective electrochemical analysis of an aqueous test sample for an analyte of interest, with biosensor comprising a working electrode comprising (a) an effective amount of oxidase enzyme specific for the analyte of interest, and (b) a metal catalysts doped carbon composition specific for the catalytic reduction of hydrogen peroxide liberated from enzymatic action of said oxidase upon the analyte of interest. The system and method of this invention effectively perform such selective electrochemical analysis in the presence of common interferents (e.g. acetaminophen, uric and ascorbic acids, catecholamines) at relative low voltages (from about +0.3 to -0.25V), so as to avoid generation of an overlapping signal from such interferents.